Fact Sheets

SRS

Tritium Facility Modernization and Consolidation Project

The Savannah River Site Tritium Facilities consist of four main process buildings. Two of these buildings — 232-H and 234-H – were built in the 1950s. Building 238-H was built in the late 1960s. Construction of the newest building, 233-H, began in 1986, and it became operational in 1994.

The purpose of the Tritium Facility Modernization and Consolidation (TFM&C) Project is to consolidate the tritium processing and handling activities,to improve safety, reduce environmental releases, improve productivity and significantly reduce future operating costs. This consolidation will, among other advantages, allow the deactivation of the 50-year-old 232-H building. The TFM&C Project also includes construction of the Materials Test Facility.

Project Objectives

- Tritium processing operations are being consolidated. New tritium processing equipment is sized to accommodate the new tritium source - the Commercial Light Water Reactor/Tritium Extraction Facility combination.
- The Materials Test Facility, a laboratory which performs reservoir surveillance operations and tests tritium effects on materials, has been relocated and houses life storage equipment, contaminated material examination equipment and motor control center equipment.

- Support services and utilities will be modernized to support the relocated processes.

Technology Improvements

The new tritium processing equipment in 233-H will continue to use technology advances to improve safety, health and environmental protection. These advances include tritium confinement in gloveboxes, glovebox cleanup systems to minimize tritium releases to the environment, metal hydride beds for tritium storage in a safe solid form, and dry pump systems to eliminate use of oils and mercury (hazardous and mixed wastes).

In addition to the existing technologies, the getter beds technology will be used in the TFM&C project. Getter beds replace the existing oxidation-absorption technology of stripping small amounts of tritium from gas streams. Getters are designed to remove tritium and other elemental hydrogen isotopes from the gas stream onto a metallic material such as a metal hydride/tritide.

The new Material Test Facility uses computer-controlled environmental chambers for tritium reservoir temperature conditioning. Also, the facility will employ a new generation commercially available ion chamber to detect tritium in the room and hoods.

Current Status

The TFM&C project is currently validated for a total project cost of $142 million. Construction began in June 1998. The project is scheduled for completion in September 2004. The status of individual facilities is:

233-H Status: The 233-H facility began "hot" (radioactive) testing in December 2003, with full operation scheduled for August 2004.

Materials Test Facility Status: The facility received approval to begin radioactive operation in April 2004. Startup testing is expected to complete in mid-July, signaling the beginning of full operations in this facility.